

# Energy Conservation Committee Annual Report



**Jessica Stoner, Project Manager**  
**Management Services Division**  
**October 2010**



MARYLAND ENERGY  
ADMINISTRATION

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# Agenda

- Members of the Energy Conservation Committee
- Maryland Energy Administration Grant Awarded Projects
- Additional Initiatives Implemented in FY09 - FY10
- Fuel Conservation Plan
- Outlook for FY11



# Members of the Energy Conservation Committee

- **Austin Abraham** – Management Services
- **Charlie Dalphon** – BOE
- **David Ennis** – DPW
- **Doug Pearre** – Maintenance
- **Hal Good** – Purchasing
- **Hilari Varnadore** – Office of Environmental Sustainability
- **Jeannine Jennings** – Social Services
- **Jessica Stoner** – Management Services
- **Kevin Demosky** – DUSWM
- **Kevin Fisher** – Facility Services
- **Mike Butler** – Maintenance
- **Pat Hannah** – Fleet Services
- **Steve Logsdon** – Maintenance
- **Steve Moriarty** – IIT
- **Tim Clarke** – Sheriff's Office
- **Todd Oyster** – Maintenance
- **Wayne Roach** – Facility Services





# **Maryland Energy Administration Grant Award Projects**



# Maryland Energy Administration Grant Award Projects

- Awarded \$80,000
- 21 Projects Related to Energy Conservation
  - *Lighting*
  - *Occupancy & ambient lighting sensors*
  - *Energy Management Systems*
  - *HVAC replacements*
  - *Controls, programmable thermostats & timers*
  - *Building Energy Assessments*



# Upgrades to Lighting

## 110 lights upgraded from metal halide or mercury vapor to T-8 fluorescent

- Locations: Courthouse, Health Dept., Transit, Westview Fire station, and Fleet Services
- Grant Award: \$13,850 (*17% of funds*)
- Estimated Savings: \$10,500/yr.
- Payback: 1.32 years



# Occupancy & Ambient Lighting Sensors

**75 occupancy sensors installed in storerooms, mechanical rooms, and other selected areas**

**41 ambient lighting sensors installed in front lobby and stair towers at the LEC**

- Locations: Courthouse, DPW, Health Dept., LEC, Westview Fire station
- Grant Award: \$6,120 (*8% of funds*)
- Estimated Savings: \$5,800/yr.
- Payback: 1.06 years



# Energy Management Systems

## Upgraded HVAC controls, installed new programming and reconfigured existing software

- Locations: Health Dept. and Urbana Library/Senior Center
- Grant Award: \$29,860 (*37% of grant*)
- Estimated Savings: \$16,665/yr.
- Payback: 1.79 years







# HVAC Replacements

**Replaced 3 aging HVAC units increasing the energy efficiency rating of the equipment**

- Locations: ADC and Senior Center
- Grant Award: \$21,000 (*26% of funds*)
- Estimated Savings: \$1,135/yr.
- Payback: 18.50 years



# Programmable Controls

**CO sensors & controls to manage exhaust fans; programmable thermostats on radiant heaters; and timer on air compressor**

- Locations: Courthouse, Transit, and Westview Fire station
- Grant Award: \$2,180 (*3% of funds*)
- Estimated Savings: \$2,280/yr.
- Payback: 0.96 years

# Building Assessments



**Evaluated operating systems and their impact on energy consumption**

**Identified programs and projects to reduce energy consumption and costs**

- Locations: ADC, Hwy/Fleet Services, C. Burr Artz Library, Emmitsburg Community Center
- Grant Award: \$9,000 (*11% of funds*)
- Savings: Priceless
- Benefit: Provides guidance and direction for future projects



# MEA Recap

- Total spent: **\$80,000**
- Future on-going savings: **\$36,320/yr.**
- ENERGY Saved:  
**356,665 kWh annually**  
**925 therms (natural gas) annually**





# Additional Energy Initiatives in FY09-FY10



# TPO Roof Replacements



**Thermoplastic polyolefin (TPO) roofing is usually a light or white colored roof, which absorbs less heat, reducing the amount of heat absorbed into a building's conditioned space.**

- Location: Health Dept., Parks and ALS
- Savings: Combined = \$1,360/yr. (30 years = \$40,800)



# Lighting Replacement & Conservation

- Metal halide to fluorescent at LEC
- Incandescent to LED at Courthouse
- 32-watt to 28-watt fluorescent replacements County-wide
- Modifications of light controls at the Health Department
- Total savings = 81,477 kWh  
\$8,960 annually





# Downsizing Fleet Vehicles

- 8 Fleet vehicles downsized
- 11 Fleet vehicles replaced with hybrid equivalent
- Total Savings = 3,985 gallons of fuel and \$9,480 annually





# Other Projects Showing Savings

- Rooftop unit replacements
- Air temperature equalizers in classrooms
- Dual flush handles in restrooms
- IIT's Data Center Renovation
- Total Savings = \$19,760 annually





# **FY2009 & FY2010 On-going Annual Energy Savings Achieved...**

**\$75,880**



PLUS...

# Fuel Conservation Results

	Total Gallons Saved	52-Week % Change
1 <sup>st</sup> 52-Weeks (FY09)	77,191	-7.1%
2 <sup>nd</sup> 52-Weeks (FY10)	66,394	-6.2%
<b>Total</b>	<b>143,585</b>	

**Total 2-year savings = \$330,000**

# \$\$\$ Results...

**5-Year Cumulative Savings  
with Fuel Conservation**

**\$930,000**

**On-going Annual Savings  
with Fuel Conservation**

**\$391,470**



# County Energy Conservation Planning

## COMPREHENSIVE ENERGY PLAN FOR FREDERICK COUNTY, MARYLAND -FINAL-



Management  
Services Division  
September 2010

## Sustainable Action Plan for County Operations



Frederick County, Maryland  
FY 2011 – FY 2015



Frederick County Office of  
Environmental Sustainability  
*Ensuring Our County's Future*





# Outlook for FY11

- TransIT's first 2 hybrid buses
- Emmitsburg Community Center TPO roof
- Brunswick Library – LEED Certified
- Catoctin Nature Center – Green roof
- Teleconferencing capabilities



# EECBG Projects for FY11



- Solar Domestic Hot Water Preheat Project
- LED lighting conversion in Courtrooms
- LED lighting conversion at Highway Operations/Fleet Services truck shed
- HVAC replacement at Pinecliff A-Frame

